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ACCOMMODATIVE AND MUSCULAR ASTHENOPIA.

Taken from a paper read before the Philadelphia County Medical Society, Feb. 23d, 1876.

BY FRANKLIN D. CASTLE, M.D.,

Surgeon to the German Eye, Ear, and Throat Infirmary, Philadelphia.

Stellwag's definition of Asthenopia is as follows:—"Asthenopia is the inability to maintain the adjustment of the dioptric apparatus, or of the optic axes, for short distances for a length of time: and the hyperæsthesia of the retina and ciliary nerves accompanying this inability." This definition, however, has reference to a condition which is fully developed, and in which all the symptoms of the affection are clearly defined.

The initial symptoms of accommodative asthenopia are sometimes rather obscure. There are cases in which, for some time, the patients only complain of a certain irritability of the eyes, which is brought on, or at least aggravated, by using them. They are somewhat photophobious, perhaps; the conjunctiva may be slightly hyperæmic, a condition which is aggravated by exposure to wind and dust. If the eyes are hypermetropic, there may, perhaps, be, from time to time, a slight tendency, in the one or the other eye, to turn inward. In these cases the patients do not complain of imperfect vision; they can see perfectly well in reading and writing; they only speak of unpleasant sensations in and around the eyes when they attempt to use them. Perhaps, if they try to thread a needle, they experience some difficulty in doing so. Here we have a picture of the first stage of a process which may develop into actual accommodative asthenopia, or also lead to strabismus convergens. We may suppose that in these cases we have before us a simple hyperæmia of the ciliary muscle.

In a more advanced stage of the process, where a somewhat paretic condition of the muscle manifests itself, it is very natural to suppose that, in consequence of long-continued hyperæmia, the tissue of the muscle has lost its original elasticity, and that finer organic changes have already taken place in its structure. That, in these cases, all the symptoms are occasioned by strain upon the ciliary muscle, is proved by the fact that the symptoms are promptly relieved by a suitable convex glass, provided the internal recti muscles are not also affected, in which case a prism must be combined with the convex glass.

The symptoms of accommodative asthenopia, when fully developed, are as follows: The patient notices, in addition to the unpleasant sensations in and around the eyes, that after using his eyes for a short time, in reading, for example, the letters become pale and indistinct. This is caused by the giving way, the diminished tension of the ciliary muscle, in consequence of which the convexity of the lens is diminished, and circles of dispersion of light fall upon the surface of the retina. If, now, the book is held at a greater distance, the ciliary muscle is to a certain extent relieved, as it does not have to render the surfaces of the lens quite

so convex as before. Soon, however, the necessity of a greater visual angle makes itself felt; the retina is too far removed from the letters of the book to admit of perceptions which have the necessary degree of distinctness, and the book is brought nearer to the eye, thus necessitating increased contraction of the ciliary muscle; this muscle, again, gives way, and in a short time both muscle and retina become unequal to their task, and the letters seem to swim before the eyes. In these cases, a species of hyperæsthesia of the retina is apt to be developed, producing a very unpleasant sensation of dazzling. It sometimes happens that the symptoms of insufficiency of the ciliary muscle which have just been described develop very rapidly, without the concomitant symptoms of pain, tension, etc., that usually accompany, and often precede, the symptoms of insufficient muscular action.

In making clear to ourselves what is to be understood by the expression accommodative asthenopia, we must sharply distinguish it from presbyopia, and from paralysis of accommodation. The first observation which the presbyope makes, is, that he is obliged to hold the book at a greater distance than formerly, thus reducing the size of the visual angle, and rendering the perception of small type difficult, if not impossible. This increase of the distance of the near point is owing to increase of density and greater homogeneity of the lens, which is thus rendered less susceptible of accommodative change of form. To this is superadded, with advancing years, senile involution of the muscle of accommodation. In presbyopia, we have to do with changes in the lens, rather than in the contractile and sensitive muscle, and hence we find the ciliary hyperæsthesia, which is so apt to manifest itself in accommodative asthenopia, absent in presbyopia. In paralysis of accommodation, such as occasionally manifests itself after diphtheria, for example, the range of accommodation is reduced to nothing, and, unless the eye be myopic in a medium or high degree, convex glasses, varying in strength according to the natural refractive condition of the eye, will be required in order to produce clear vision of near objects. Here, too, the symptoms of ciliary hyperæsthesia which usually accompany accommodative asthenopia are absent. If, however, as the muscle begins to recover, it is overtaxed, without having a portion of its work taken from it by means of a convex glass, symptoms of accommodative asthenopia may appear.

It remains to be mentioned, before we speak of the treatment of accommodative asthenopia, that this condition can occasionally be developed in myopes by wearing a too strong concave glass, and also by using a glass for near vision, which should only be used for a great distance. As is well known, a neutralizing concave glass, placed before a myopic eye, brings to a point, within the shortened clear visual distance, virtual upright images of objects beyond the far point, and the nearer the object is the nearer its virtual image will stand to the eye, and hence the greater will be the strain brought upon the ciliary muscle in its effort to render the lens sufficiently convex to concentrate the rays coming from the object in a focus on the retina.

In order to avoid thus artificially developing an accommodative asthenopia, we should, in prescribing a neutralizing concave glass for a myope, where the far point is at a greater distance than 10″, caution him against using his glass in reading, writing, etc. If we have a case of myopia where the far point is between 10″ and 6″ distant from the eye, we may prescribe a concave glass, which neutralizes the myopia, for greater distances, and should prescribe for reading, writing, etc., a glass whose focus lies a few inches beyond the far point.

In myopia of less than six inches far point, physicians are in the habit, for several good reasons, of prescribing glasses that are relatively too weak for distant vision, and it is generally found that in these cases the myope can use the same glass for near and distant vision with advantage.

The treatment of accommodative asthenopia is highly satisfactory. Sometimes all that is necessary is to correct bad habits on the part of our patient, to insist upon his working with a better natural or artificial light, etc. In general, however, we are obliged to relieve the hyperæmic or paretic ciliary muscle by prescribing convex spectacles, thus increasing the refractive power of the dioptric apparatus, and lessening the necessity of accommodative change of form of the lens, in using the eyes for short distances.

Now, the question arises, what power of glass should be used in any given case? and the question is answered by saying, that, in general, this can be best decided by experi-

ment, just as this is ordinarily done in hypermetropia, where asthenopic symptoms have not as yet manifested themselves.

In regard to the use of the opthalmoscope in determining the refractive condition of an eye, Mauthner remarks, in his "*Lehrbuch der Ophthalmoskopie*," as follows: "Does examination by means of the ophthalmoscope show us the real condition of refraction of an eye? It is manifest that it does, if the accommodation of the individual who is under examination is paralyzed by means of atropia. But it also gives us a true result if atropia be not used. If you tell your patient to look toward a distant point in the room, which is not very brightly lighted up during the examination, the eye gazes into the distance, without fixing its gaze upon any particular point, without perceptibly accommodating. It certainly is well not to examine in a small cabinet, and, moreover, the use of the weakly-illuminated mirror is perhaps of some use, as the dazzling light of a strongly-illuminated one continually attracts the attention of the patient, and so, perhaps, he may be tempted to bring his accommodation into play. In this way it is not difficult to determine emmetropia and myopia, also the degree of the latter." He also remarks with reference to hypermetropia: "In a number of cases, let the grade of hypermetropia be determined by means of the ophthalmoscope, and then the manifest hypermetropia by means of convex glasses. Then paralyze the accommodation of the eye in question by means of atropia. After maximal dilatation of the pupil and complete paralysis of the accommodation have ensued, let the hypermetropia be again determined by means of the opthalmoscope, and also by means of convex glasses. We shall see, on every occasion, that the grade of hypermetropia, as determined by the opthalmoscope, remains the same before and after the instillation of atropia, and that the examination of the eye by means of glasses, after the accommodation has been paralyzed, shows the same grade of hypermetropia as is manifested by the ophthalmoscope."

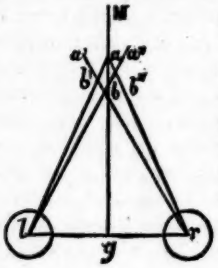
Even if we admit all this (which, moreover, is doubtful, Stellwag, for example, still maintaining that it is necessary to relax the accommodation of the eye examined, by means of atropia, if we wish to obtain trustworthy results), it still will not do to give in every case of hypermetropia, complicated with accommodative asthenopia, a glass which completely neutralizes the hypermetropia, for the same reason that we cannot always do this in cases of hypermetropia not complicated with accommodative asthenopia. We must not forget that the internal recti muscles, even if they do not participate at all in the original affection, often prove to be exceedingly sensitive, if we presume to take liberties with them by prescribing a glass which relaxes the ciliary muscle beyond a certain point. We must remember that in binocular vision a certain amount of accommodation presupposes a certain amount of convergence. Now, inasmuch as the distance of the object worked at or the book read may be considered as a fixed quantity, it may happen, if we relax the ciliary muscle by means of a convex glass beyond a certain degree, that the convergence, rendered necessary by the distance of the object, reaches or even transcends the limits within which it is variable, in accordance with the acquired relations of co-ordination subsisting between the ciliary muscles and the recti interni.

It is true that for a fixed convergence we may have a certain latitude of accommodation; a fixed convergence being given, we may have a greater or less contraction of the ciliary muscles, within certain limits, produced, and easily maintained. If, however, we use a strong convex glass, thereby relaxing the ciliary muscle to a great extent, thus forcing the recti interni muscles to contract, in order to maintain the necessary convergence, to a degree that is entirely incompatible with the relationship of co-ordination, which has already been formed by habit between the latter muscles and the ciliary muscles, we may, while we relieve the accommodative asthenopia, produce a condition of irritation of the internal recti muscles, which will manifest itself by the most unpleasant sensations of tension and actual pain whenever an attempt is made to use the glass, and which may lead ultimately to genuine muscular asthenopia. We must never lose sight of the relative accommodation, as it is called.

In order to explain more fully this subject of relative accommodation, which is simple enough in reality, let us make use of the diagram taken from Stellwag.

Let *l* and *r* be the centres of rotation of both eyes, *lr* the base line, and *Mg* the median line perpendicular to it. Let *b* be the point of binocular fixation, and *bl*, *br*, the visual lines. If we place convex glasses now before the eyes,

the virtual images of the fixed point *b* are displaced toward *a′ a″*, and as they fall in the visual line, are seen singly in the point *a*. Under such circumstances, the convergence for the distance *b* seems to be united with the adaptation of the dioptrical apparatus for the distance *a*. In other words, we lessen by a convex glass the work of the ciliary muscle, while the convergence remains the same, that is, the muscles of convergence are relatively overtasked. If the point *b* is not displaced too far away from the eye by the convex glasses, the muscles of convergence may adapt themselves to this new relationship. If, however, the point *b* is thrown too far away, the convex glasses are too strong, the muscles of convergence are relatively overtasked and painful sensations are developed in these muscles. Now, if, instead of convex glasses, prisms, with the bases turned inward, be placed before the eyes, which refract the rays coming from the point *b* as if they came from *b′ b″*, or what amounts to the same thing, from *a* (a prism always refracts the rays of light toward its own base), we have convergence for the distance *a* associated with adaptation of the dioptrical apparatus for the distance *b*. In other words, we lessen the work of the muscles of convergence, while the work of the ciliary muscles remains the same. Just as in the former case, the ciliary muscles may adapt themselves to this change in the convergence up to a certain limit. If, however, the prisms used are too strong, the ciliary muscles, relatively overtaxed, will give way or become painful.



Bearing this important relationship in mind, we can now lay down definite rules for the treatment of accommodative asthenopia. In many cases, we shall find that that convex glass —which renders the letters of the book deep black, yet does not enlarge them noticeably, and does not necessitate the holding of the book too near to the eye—will relieve the symptoms of asthenopia. A slight enlargement of the letters, if we find it necessary to use a strong glass, is without significance. A convex glass has the effect of advancing the nodal point of the eye, where the rays cross each other, toward the cornea, and hence enlarges the retinal image. The stronger the glass is, the further the nodal point of the eye is moved forward, and hence the greater the enlargement of the image. If, however, the glass produces a very great enlargement of the image, that is a sign that the ciliary muscle is relaxed to too great an extent, the glass is too strong, and if its use is persevered in, symptoms of muscular asthenopia will be sure to manifest themselves. Just as, when the ciliary muscle is overtaxed, objects appear too small oftentimes, a condition called micropsia, so, when the ciliary muscle is unduly relaxed, the opposite condition of megalopsia, seeing objects magnified, is observed. This condition of megalopsia, which depends, in reality, upon an error of the judgment, is to be carefully distinguished from the enlargement before adverted to, which depends upon the distance of the glass from the optical centre of the eye.

It often happens, in accommodative asthenopia, that we are obliged, in order to relieve the paretic ciliary muscle, to use a convex glass of such power, that the relations of coordination between the ciliary and internal recti muscles are very much disturbed; in other words, the internal recti muscles are strained to such an extent, to maintain the necessary convergence, that extremely unpleasant feelings of tension are developed in and around the eyes. In such cases, we must lessen the convergence by combining the convex glasses with abducting prisms, that is, prisms with the bases turned toward the nose. The necessary degree of the prism must be found by experiment. That prism which enables the patient to read with perfect comfort is the one best suited to the case. In these cases we are generally able, in a short time, to weaken the prisms, and finally to dispense with them altogether.

It sometimes happens that accommodative asthenopia is occasioned by insufficient convergence, the ciliary muscle giving way, because the maximum of the power of accommodation must be called into activity, which the existent degree of convergence admits of. In such cases, which are rare, adducting prisms, with the base turned outward, must be used, either alone or combined with convex glasses, as the case may be, in order to increase the convergence, and thus relieve, to a certain extent, the ciliary muscles. I have notes of

two such cases, both patients being old people, and hypermetropic in a high degree. They had been in the habit of using strong convex glasses, but found that after reading or writing for some time vision became blurred, and unpleasant sensations were excited in and around their eyes. The next stronger glass, however, did not afford perfect relief, and it was noticeable in both these cases, that a stronger glass obliged them to approach their eyes too closely to the book, thus proving that the glass was too strong. I was led by this combination of symptoms to suspect that insufficient convergence might be the cause of the trouble, and the suspicion was changed into certainty, when it was found that a prism of 2°, with the base turned outward, combined with the convex glasses, which they had been in the habit of using, relieved all their difficulty.

312 *South 15th street.*

IMPETIGO CONTAGIOSA.

BY ARTHUR VAN HARLINGEN, M. D.,
Chief of the Skin Clinic in the Hospital of the University of Pennsylvania.

Within the last few weeks there has appeared, in various parts of this city, an affection of the skin so unusual in its occurrence as to call for special notice. Some twenty cases have come to my knowledge, of which several were observed at the Dispensary for Skin Diseases in Eleventh street; others at the Hospital of the University of Pennsylvania; and some through the kindness of Dr. Yocum, of West Philadelphia. As the appearances presented were very much the same in all these, I shall only describe a single one, and shall add to my account a few remarks on the variations presented in other instances.

Mary R., 9 years of age, apparently in good health, was brought to my Dispensary for Skin Diseases on the 20th of July, suffering from an eruption of the skin, which affected chiefly her face and arms, although a few lesions could be observed scattered elsewhere over the body. The eruption consisted in pin-head to pea-sized vesicles filled with a clear or slightly milky fluid, rising directly from the skin, with a very slight reddish areola, and no inflammatory base. Other vesicles, or rather bullæ, were larger, even to half an inch in diameter, but these had invariably collapsed, in some cases displaying a thin pellicle, such as is ordinarily observed over a blister the contents of which have been evacuated. In other instances the pellicle had become rubbed off, leaving a raw surface not unlike that of a recent burn, or, rather, looking not unlike the surface exposed when the cuticle has been removed by a blister. In one or two places the raw surface presented the appearance of a very shallow erosion. Here and there the lesions could be perceived in an evidently later stage, being covered in some places with a light yellowish crust, somewhat detached at the edges, with occasionally a patch from which the crust had fallen, leaving a dusky erythematous area, but without infiltration. The arrangement of the eruption was peculiar and characteristic. The smaller vesicles usually occurred singly, and were mostly found over the forehead, back of the neck, and scalp. About the nose and mouth the larger lesions described were grouped together, frequently coalescing and forming irregular patches, covered with thin straw-yellow crusts. On the right wrist a single patch of the lesion, about an inch in diameter, could be seen, which resembled precisely an imperfectly blistered burn. There were two or three lesions, evidently of the same nature, situated on the buccal mucous membrane, one over the roof of the mouth, and one on either tonsil. They presented the appearance of very shallow erosions; the surface velvety, red, and with a shred of pellicle about the edge. The child did not complain of any pain or annoyance, and had not, by the mother's account, suffered any febrile reaction. The lesions were evidently free from itching, since no attempt whatever was made to scratch or rub them, except in the region of the mouth, where children of the lower classes are so apt to use the hands for the purpose of removing any dirt or excess of the normal secretions of the parts. According to the mother's statement, the affection had lasted about ten days. She said the lesion first made its appearance as a very small "bleb," which filled up, grew to the size of a pea, and broke, usually within twenty-four hours. So soon as it broke it began to spread, until it reached the size of a dime or quarter-dollar, and then a thin skin began to form over it, which after a few days scaled off, leaving a dusky-red patch behind. Having had several patches of the affection on her own person, the mother's testimony as to the absence of sensation was quite reliable, and she was very posi-

tive upon this point. As regards the origin of the affection, the mother supposed they had "caught it" from a neighbor's child. Four members of the family, the mother and three children, were similarly affected.

The case just cited was a typical specimen of the whole group, which resembled it in all essential points, although differing now and then in some unimportant particular. Thus, in some instances, the original vesicles, after growing to the size of a split pea, became umbilicated and dried up, leaving a thin crust, without any abrasion. In several cases where the patient was unhealthy the eruption assumed the appearance of impetigenous eczema, thick yellowish-brown crusts formed, and the disease took on a more serious and disfiguring aspect. The patients were nearly all children; occasionally parents would show one or more vesicles, but no well-marked case occurred among adults.

Desiring to satisfy myself as to the contagious character of the affection, and also to watch the course of the eruption, I inoculated myself. Scraping the surface of the skin over a small spot on my forearm, as if preparing to vaccinate, I laid upon the abraded surface a drop of clear serum, taken from a typical vesicle on the forehead of one of the patients under observation. A strip of isinglass plaster was placed over the spot, which was allowed to remain untouched for twenty-four hours. At the end of that time a pale yellow bleb could be seen through the plaster, occupying the whole surface of the abrasion, perhaps a quarter of an inch in diameter. On removing the bit of plaster the pellicle came away with it, leaving an eroded surface, resembling a very shallow ulcer. This was left uncovered. At the end of forty-eight hours a vesicle, perhaps the size of a large pin head, could be perceived, along side of and connected with the original vesicle of inoculation. This last was now covered with a translucent crust. At the end of five days the area of the newly-formed vesicle, which meantime had collapsed a few hours after its appearance, had become enlarged to the diameter of one-third of an inch, and was covered with its flaccid pellicle. A new spot had appeared spontaneously in the meantime, about half an inch from the other lesions. This proved abortive, and never went beyond the papular stage. At the end of a week all that remained of the original lesion was a closely-adherent brownish crust; the secondary vesicle was umbilicated, covered with a thin yellowish crust, and was evidently drying up rapidly. A drop of serum from the secondary vesicle, inoculated in the skin at the distance of half an inch, gave, too, a precisely similar vesicle. There was never the least sensation of burning or itching in any of the lesions. No treatment was employed. In the course of a fortnight the eruption had entirely disappeared, leaving only two or three small reddish stains.

To one accustomed to encountering the various diseases of the skin, in their different forms, from day to day, the diagnosis of these cases of impetigo contagiosa could present little difficulty. To the general practitioner, however, whose attention has never been particularly drawn to dermatology, such cases would be likely to be very puzzling. Impetigo contagiosa is, as I have said, a rare, or, at least, an unusual disease. Out of some four thousand cases of skin disease observed by me in this city during the last few years, I have never, until this time, met with a single instance of the affection. Cases of impetigo contagiosa have been reported in some of the journals, from time to time, but only the most recent text-books on dermatology give any description of it. Perhaps the most clear and concise description of the disease is given by Duhring,* to whose work any one desiring fuller information is referred. I shall only add here a few remarks upon the diagnosis and treatment of the affection.

Impetigo contagiosa is most likely to be confounded with eczema pustulosum (impetigenous eczema), or with simple impetigo. From eczema it is distinguished by its contagiousness, by the discrete character of the eruption, the peculiar crusts† which result from the vesicle, and by the facility with which it is cured. In addition, the lesion of impetigo contagiosa does not itch. From impetigo, properly so called, impetigo contagiosa is to be differentiated as follows: "The initial lesion in impetigo contagiosa is a vesico-pustule similar to that of vaccinia; in

* "Diseases of the Skin;" Philada., 1877; p. 285.

† At the time the notes on my cases were recorded I had not particularly examined the description of the affection by other writers, and perhaps did not lay as much stress upon these characteristics as they deserved. The crusts are usually described as the size of area of the bullæ, flat, straw color, dry, granular, elevated above the integument. As they desiccate, the crusts become detached at first about the margin, when they present the appearance of being "stuck on."

impetigo it is a perfect pustule. The lesion of impetigo contagiosa is quite superficial; that of impetigo has a deeper seat. The pustule (vesicle) of impetigo contagiosa is flat, and is often marked by umbilication; that of impetigo is rounded, conspicuously raised, and is without central depression. The crusts of impetigo contagiosa are straw-colored, those of impetigo are yellowish or brownish. Impetigo, moreover, is not contagious."*

As regards the treatment of impetigo contagiosa, this is usually simple. The affection ordinarily runs its course within ten days or two weeks, and tends to spontaneous recovery. In this respect the prognosis is very different from that of eczema. The main point is to guard against transmission of the affection and auto-inoculation. In order to do this, it suffices to cover the lesions with some mildly stimulating ointment, as the benzoated oxide of zinc ointment, or a weak ointment of white precipitate. Where there is any cachexia or a low condition, tonics are called for, of which the syrup of the iodide of iron is perhaps the best.

LOSS OF ONE TESTICLE NOT INTERFERING WITH PROCREATIVE POWERS—UNFORTUNATE INTERFERENCE OF THE PATIENT IN HIS OWN CASE—RECOVERY.

BY H. A. SPENCER, M. D.,
Of Erie, Pa.

As I noticed, in the last number of the REPORTER, an inquiry by a regular physician, whether "the loss of one testicle would interfere with procreation," I take the liberty of reporting the following case, which will answer his request, and, perhaps, be of some interest to the numerous readers of the REPORTER:—

While practicing in Waterford, in this county, one dark, stormy night in the month of April, 1856, I was requested to visit Isaac H. (now deceased), of McKean township, who, the messenger informed me, had met with a very serious accident. The distance being six miles, and the roads in an awful condition, it was midnight before I arrived at my destination. Upon entering the room of my patient, I discovered at the first glance that Isaac had met with some very severe injury, and that the greater portion of the life current, that gave him usually a ruddy appearance, was gone, leaving him bleached, and looking shiny and ghastly. After administering a stimulant, I succeeded in getting from him and his family the following history of his case:—It appeared he had been out gunning in the afternoon, and while in the act of jumping down from a log, six feet from the ground, struck upon the stump of a projecting bush, that had been cut off in a slanting manner, leaving it quite sharp at the point; this sharpened point penetrated the scrotum, at the lower portion, and when Mr. H. examined himself he found his left testicle hanging pendent two inches below, and entirely out of the scrotum; no injury to the organ, only the wound in the scrotum. This was a little more than Isaac had bargained for, and not taking much time to consider the matter, he decided the quickest way to dispose of the case would be to remove the testicle, and therefore, instead of returning the protruding member to its normal position, he took out his jack-knife and severed the spermatic cord, artery, etc., and as he was then one-half mile from home, at once started for the house; but, alas! "Man proposes, but a higher power disposes." Isaac soon discovered his pants saturated with blood, and even his boots were fast filling up with the vital fluid pouring from the seminal artery; it was at this juncture that he began to think that he had probably in his impulsiveness treated his case badly. Soon faintness came on, and he fell to the ground. After lying there for some time he attempted to get up and go on again, but soon discovered that he had lost too much blood to even sit up; and as it was getting dark, he made up his mind that his only chance was to lie still, and try and get strength sufficient to halloo and bring some one to him; this he did, and as his wife had became alarmed, and got a neighbor to go and see what detained her husband, they happened to take the correct course, and soon came within hearing of the unfortunate hunter. After reaching him, they soon procured a team and conveyed him to his home, and I was summoned, as before stated. I found that after nearly all the blood had run out of his system nature had stepped in (as she always does), and a clot was formed that filled the entire scrotum, and distended it almost as large as the patient's head, and the hemorrhage ceased. I kept him quiet, and in a horizontal position; used cold applications, nourishing diet, and

* Duhring, loc. cit., p. 284., art. Impetigo.

in a few days the clots passed out of the scrotum, followed by some inflammation and suppuration, but he had no untoward symptoms, and in a few weeks was all right again. He called at my office five years after his injury, and said to me, in a laughing mood, that he thought that two testicles were superfluous, as he had had an addition of a nice boy and girl to his family since he met with the unfortunate occurrence.

Hospital Reports.

DISEASES OF CHILDREN.

CLINICAL SERVICE OF DR. WM. PEPPER,

Professor of Clinical Medicine at the University of Pennsylvania.

REPORTED BY S. M. MILLER, M.D.

Heart-Clot in Diphtheria.

[The following case, from which a specimen was obtained which served as a basis for the lecture, was seen in consultation with Dr. Yarrow, who kindly furnished the notes of the early days of the attack.]

I. C., a very healthy girl, aged six, had a sharp attack of diphtheria about December 10th, 1876. The membrane disappeared on the fifth or sixth day, but recurred forty-eight hours later, and she was much more ill than at first, with very extensive formation of pseudo-membrane. She was treated throughout with full doses of quinia, tincture ferri chloridi, potassium chlorate and solution of iron, and chlorate of potassa applied locally to the fauces. Again the membrane disappeared, also the swelling of the cervical glands, and the subcutaneous infiltration, which had been extreme, slowly subsided; she regained strength and was apparently beginning to convalesce early in the third week of the attack, when she was seized with vomiting. The urine was slightly albuminous; no microscopical examination was made. The vomiting was constant, and resisted every effort of a most judicious kind for four days. I saw her with Dr. Yarrow on December 29th. It was agreed to stop all food by the mouth; to give injections of Valentine's beef extract, with three grains of quinia and two drops of tincture of opium, every four hours, and by mouth a powder of calomel, one-third of a grain; soda bicarbonate, two and a half grains, every three hours. A blister was applied to the epigastrium. She was then very restless, tossing from side to side; the pupils were dilated, surface very pale, extremities not cool, tongue slightly coated, dryish; epithelium rough, and papillæ prominent. It was difficult to ascertain whether there was epigastric tenderness, it certainly did not seem to be intense. More minute examination was avoided for fear of producing vomiting. The next day she seemed better, had vomited only once in twenty-four hours, and had begun to retain a few drops at a time of milk and lime water. The injections had all been retained. The tongue was a little less dry, but the child quiet and indisposed to speak. The pulse was small and weak, but not more so than seemed natural, considering the exhaustive character of the attack. The powders were now ordered to be given less frequently; injections, also, at longer intervals, and a little more nourishment, with a few drops of brandy cautiously given by the mouth.

December 31st. vomiting had entirely ceased; the child had retained teaspoonful doses of nourishment about every two hours; the injections had also been taken regularly and retained. The surface was pale, and perhaps slightly cool, but this was not specially noticed; pulse small, but regular, 85–90 in a minute. There was no cough. The heart and lungs were examined, and nothing unusual noticed. There was no valvular murmur, the sounds were faint, but neither tumultuous nor confused. About twelve drops of tincture opii deodor. had been given, in divided doses, during twenty-four hours. The amount of nourishment by the mouth was increased. Full doses of quinia were continued by injections. Two or three hours after our consultation it was noticed that the child's feet became cold, and that this soon extended to the knees and arms. The child's appearance changed; she gave a sudden gasping effort, and a motion, as though to push the mother away, and died without further struggle.

At a post-mortem examination, made on the following day, intense congestion of the liver was found, with enlargement and a deep purplish color. The kidneys were also deeply congested, the secreting cells of the tubules being in a state of "cloudy swelling." The spleen was slightly enlarged from engorgement. There was no pleural or pericardial effusion. The lungs were pale, retracted and crepitant. The right cavities of the heart were enormously distended. The auricle contained much soft, dark, clotted blood. There was a firm white clot entangled in the tricuspid leaflets, and extending from there into the right ventricle, where it was very tightly attached to the muscular trabeculæ by delicate prolongations; was thence prolonged into the pulmonary artery, the calibre of which was, to a great extent, obstructed by a firm, white, ante-mortem clot, which was moulded on the leaflets and closely apposed to the walls. The left cavities of the heart contained less blood, but here also there was a large firm ante-mortem clot obstructing the mitral orifice, partly filling the left ventricle and prolonged into the aorta. The muscular fibres from the heart were in advanced fatty degeneration, their transverse striation being in places completely obliterated. The contents of the stomach were only ingesta. Its mucous membrane was for the most part not much congested; but at one spot, near the middle of the greater curvature, there was

intense congestion. Otherwise the stomach was entirely normal.

The occurrence of heart-clot is now known to be among the dangers in so many diseases that it demands careful study. It must be understood, of course, that I only refer to such clots as are formed in the heart some considerable time before death, and which play a principal part in causing death. It is well known that whenever the act of dying is protracted, heart-clots are apt to be formed. But these have little or no pathological significance. The true ante-mortem heart-clot is distinguished by certain anatomical characters, which are unusually well illustrated in the above case. It is whitish, firm and tough; it is apt to be moulded on the inequalities of the inner surface of the heart, and may be tightly attached by delicate prolongations passing around the muscular trabeculæ. The circumstances which favor the formation of such clots are quite various. Attempts have been made to explain their production, but none of the theories have been fully substantiated, or can be applied to all cases. Among the conditions which predispose may be mentioned:—

An excess of the fibrinous elements of the blood, roughness or vegetations of the leaflets of the valves of the heart, obstructions to the circulation of the blood, failure or momentary arrest of cardiac action, and the introduction of certain specific poisons into the blood. There are doubtless other conditions, but these are the most prominent, and often several of them are associated in a single case Thus, in diphtheria, there is a greater tendency to the production of corpuscular fibrinous exudations than in other zymotic diseases, and the blood contains a larger proportion of fibrinous element. There is also a marked tendency to degeneration of the cardiac muscular fibres, with great enfeebling of its action; not rarely, also, there will be found slight evidences of endocarditis, in the form of minute bead-like vegetations on the mitral leaflets. The latter were not found in the above case, but the degeneration of the muscular structure of the heart was marked. The tendency to heart-clot in diphtheria is, accordingly, so very strong that it must never be forgotten or lost sight of. This accident may occur at any stage of the disease, and not rarely, as in this case, it takes place after convalescence seems established. I have also known it to occur at an earlier stage in cases which were apparently doing perfectly well. The only special determining influence which I have suspected in such cases has been an undue amount of muscular effort. This, therefore, should be scrupulously avoided in all cases of diphtheria, for this as well as for other reasons. Although usually followed by death, it is important to be able to detect the occurrence of heart-clot, if possible. The symptoms which may be stated as indicative of this condition are anxiety and great dyspnœa; pallor of face and coolness of extremities; small, frequent pulse; and obscure, dull heart-sounds, with occasionally a blowing murmur. It will be seen that the symptoms we have detected in the case here published were peculiarly obscure. I am inclined to regard the violent vomiting as one of the first results of the heart-clot. The obstruction to the entrance of blood into the right cavities of the heart caused intense congestion of the liver and of the mucous membrane of the stomach. This would readily account for the obstinate vomiting, and careful examination of the stomach after death failed to reveal any other cause. It is true that there had been found, a few days before, a trace of albumen in the urine, and that the early stage of kidney disease, with cloudy swelling of the epithelium, existed; but these do not suffice to account for the sudden occurrence of such violent and uncontrollable vomiting, without any symptoms of anæmia. Considering the marked ante-mortem characters of the clots, it must be admitted that they had existed for several days before death; yet until a half-hour before death no symptoms occurred to call special attention to the heart. It is true that they may have been masked by the frequent vomiting and the slight opiate effect which was maintained. There was no extreme dyspnœa, however, and the pulse was regular and not very rapid. There was also nothing special about the heart-sounds, which were observed to be merely faint. It is important, therefore, to note how insidious may be the formation of heart-clot, and how closely we should be on our guard against it. When finally the clots attained such size as to seriously obstruct the orifices of the heart, and prevent the closure of the valves, very characteristic symptoms appeared, and were rapidly followed by death.

The prognosis in cases of heart-clot is very grave. Still, in a few instances, it cannot be doubted that the clot has gradually contracted and finally become attached to some part of the heart's cavity, where it has not interfered seriously with cardiac action, and thus life has been saved. In other cases it is possible that a small clot may have undergone gradual molecular disintegration, and have been distributed without occurrence of serious embolism. This fortunate termination cannot, however, be hoped for in any given case, and nearly always death follows in from a few hours to a few days.

The most important part of the treatment is prophylactic, as the marked tendency to formation of heart-clot in diphtheria is probably connected with the special alteration of the blood, and there is no remedy known which will avert this dreadful accident. But there is little doubt that, by judiciously sustaining the tone of cardiac action, and by carefully guarding against all muscular exertion, especially in the way of sitting up or rising to the feet, a good deal may be done to lessen the danger of its occurrence.

Should it become evident that the formation of heart-clot has taken place, the only treatment to be recommended still is active stimu-

lation of the tone of the heart. The various remedies which have been advised, with the idea that the solution of the clot might be promoted, are useless. Ammonia is valuable, not in this latter way, but simply as a stimulant to respiration and circulation. Alcoholic stimuli and concentrated nourishment must be given as freely as seems called for by the prostration and the depression of circulation. I should place more reliance upon digitalis, freely administered, than upon any other remedy. Absolute avoidance of muscular efforts must be insisted on. Still, as before stated, it is only in very exceptional cases that death does not follow.

EDITORIAL DEPARTMENT.

PERISCOPE.

The Therapeutics of the Neuroses.

By Dr. BERGER, *Privat-docent* (Breslau).

Reports of the Society of Silesia, for Home Culture, Medical Section, 1876. From "*Allgemeine Medicinische Central-Zeitung.*"

TRANSLATED BY C. C. VANDERBECK, M.D., PH.D.

Phosphorus, in a toxicological point of view extraordinarily important, and manifoldly studied, has almost entirely lost its earlier therapeutic renown. Recently the English have sought to restore it to its former rank, and they have employed it as a superior remedy in the diseases of the nervous system, especially for *neuralgia*. (Radcliff, Broadbent, and particularly Thompson.) Dr. Berger has tried the remedy in twenty-two cases of neuralgia, but he is by no means able to corroborate the brilliant results of the English authors. It is true, five of these cases were cured under the phosphorus treatment, but these were only of short standing; in the majority of the cases the remedy produced no effect, though the most of these by another method of treatment were cured or improved. In six cases which remained entirely unhealed, the prolonged use of phosphorus produced no effect. From this, it seems that its brilliant anti-neuralgic effect is very doubtful, and Berger would advise, especially on account of the unfavorable effect of the remedy upon digestion, not to use it too extensively.

The remedy was used, moreover, in six cases of a peculiar nature, which, until now, has little been considered as an independent affection, for which, up to this time, no precise anatomical foundation exists. The author would designate this condition (without desiring to offer a theory of disease in the name) as hemi-æsthenia cerebralis. He understands by this a condition of pathological exhaustion of the higher psychical functions, which can proceed to a nearly complete incapacity for intellectual activity, without there being any symptoms of a palpable lesion either of the brain or other organs. It does not depend upon general debility, nor is it a partial expression of some other disease, but the neurosis stands out independently as a prominent symptom, around which other accompanying symptoms of only secondary importance (especially transitory disturbances of sensibility) are grouped.

All of the patients were young men from the educated classes, the majority being individuals predisposed to nervous conditions. Mental over-exertion formed the chief cause of this perplexing sickness; perplexing, as the patients are often compelled to withdraw from their avocations for years. Such persons are generally, though incorrectly, classified among *hypochondriacs*. Tempini employed phosphorus as a sovereign remedy for an analogous condition (hirnparese). The author has not been able to state in one of these cases a good result from the use of phosphorus, even after using the remedy for several months. The majority were improved, however, by a prolonged mental rest under favorable climatic conditions, as Alpine air.

PHOSPHATE OF ZINC.

Berger has tried this remedy in fifteen different cases of nervous affections (neuralgia, chorea, singultus hystericus, etc.), in doses of five to eight milligrammes, three times a day, in pilular form. Only twice was a favorable impression produced in hemicrania; the paroxysms appeared a little lighter and of shorter duration. In all other cases no decided influence could be obtained. By a prolonged use of the remedy light dyspeptic symptoms were produced.

The Medicinal Value of Jaborandi.

The *British Medical Journal*, July 7th, states that in the Highgate Sick Asylum, under the care of Dr. Dowse, special observations were made on the action of the newly introduced remedies, jaborandi, gelseminum, salicylic acid, etc., and modern instruments, as the cardiograph and ophthalmoscope, were brought into daily requisition to elucidate complete diagnosis. Dr. Dowse said that his experience of the use of jaborandi did not lead him to think highly of its therapeutic value when given alone, yet it was often of great use, when combined with other drugs, to promote elimination. In the following case of Bright's disease, its efficacy

was well shown. J. A., aged seventy-three; urine pale, gravity 1.010; albumen copious; hyaline casts. He had irritable heart, troublesome dyspnœa, painful and swollen joints. Five grains of the extract were given three times a day with alkali and digitalis, producing profuse ptyalism and sweating. Under this treatment, the joints soon became free from pain, the swelling of the limbs and the dyspnœa subsided, and she was rapidly improving in every way.

Dr. Dowse said he at one time thought that jaborandi would be found of value to reduce the night temperature of phthisis, but after a long experience he found such was not the case. He referred to its efficacy in promoting the flow of milk where the mammary gland was inactive after parturition, and remarked that its physiological action was of the greatest interest and importance, especially when compared with the action of belladonna, to which it was in every way antagonistic. One curious feature relative to its action, which had not been noted by M. Vulpian, was the re-secretion of pilocarpine from the blood by the submaxillary gland. A patient who was taking it stated that if he re-swallowed the saliva produced by jaborandi, it then produced profuse sweating; whereas, on the other hand, if the saliva were ejected, only slight perspiration resulted.

Diabetes in Children.

M. Reden reports his studies of the etiology of diabetes in children in the *Gazette des Hôpitaux*, No. 44. He finds that parents the subjects of gout, arthritism, herpetism, scrofula, or certain nervous affections, insanity, convulsions, etc., may either produce children who are all diabetic, or only some diabetic and others exhibiting other forms of vitiated constitution. In more than one half the cases the disease manifested itself before the ninth and twelfth years. The affection has been so often overlooked that it certainly occurs much more frequently than is suspected, and should be always sought for when a child seems to be suffering from any ill-determined form of disease. It seems to occur pretty equally in children of both sexes. Polyuria is of nearly constant occurrence, the quantity of urine being proportionally greater, as well as the quantity of sugar eliminated. Polyphagia exists in four-fifths of the cases, and wasting is an early and rapid symptom. The pulse is very frequent. The disposition of the child undergoes in the progress of the disease great change; the child, from being restless, excitable, and mischievous, becoming dull and taciturn. Complications are of less frequent occurrence than in the adult, probably because of the shorter duration (from some months to two years) of the disease. Dryness of the skin is an extremely frequent characteristic, and this symptom alone may in many cases give rise to a suspicion of this disease. Phthisis, which is usually regarded as a frequent termination of the affection, was only observed in four out of twenty-two deaths, and even in these it was doubtful that it was the cause of death. The children die in a state of marasmus, life being insensibly extinguished, and sometimes there is a state of coma. The prognosis is not so fatal as it has hitherto been considered, for of thirty-two cases at least six were cured, the recovery being always contingent on the prompt recognition and early treatment of the disease. On these conditions a great proportion of cures, which may be rendered permanent by appropriate hygienic measures, may be obtained; while, when the diabetes is overlooked, or only recognized too late, it will always prove fatal. The treatment consists almost entirely in appropriate regimen and hygiene, and should be of the same character as that employed by Professor Bouchardat for the treatment of the adult.

On the Administration of Santonin.

Mr. E. M. Boddy, M. R. C. S., etc., writes to the *Medical Times and Gazette*, July, 1877:—

There is no doubt that santonin is, for many reasons, by far the most efficient anthelmintic which can possibly be administered to children, and its combination with calomel I have found to be most advantageous in every respect. Santonin, like every other therapeutic agent, requires care in its administration; and if it is allowed to remain in the system it acts deleteriously, like certain cumulative medicines. This pernicious after-action one, of course, seeks as much as possible to obviate, and the only way to do so as regards santonin is to combine it with some purgative, such as calomel, which carries it off.

According to Falck, of Marburg, if santonin is allowed to remain in the system, we get a substance called xanthopsin, into which santonin is supposed to be transformed under certain circumstances which at present are not well ascertained. This xanthopsin is excreted by the urine, giving it a remarkable yellow color, causing a similitude to that secretion passed in jaundice, and its presence there is easily detected by caustic alkalies, which redden the urine. No doubt it is this xanthopsin which gives rise to those dangerous symptoms that have been so largely dilated on of late, and which many attribute to santonin only, forgetting or ignoring the presence of xanthopsin; and this mischievous action I have found, from experience, to be entirely counteracted, or rather prevented, by administering calomel at the same time.

I generally administer santonin combined, as I have just said, with calomel, or I give it preceded and then followed by that drug; but one plan is as good as the other. The results of so giving this anthelmintic in either of these two modes have been most happy, and I have very seldom found it necessary to repeat the dose, for such treatment is thorough, and consequently precludes the necessity of repetition.

I, myself, have never had a case where con-

vulsions or retention of urine have originated from santonin; in fact, I have never seen any untoward symptom resulting from it in any way whatever, which I attribute to my combining it with calomel, or preceding and following it up by that purgative.

My experience has convinced me that nothing of a deleterious tendency can possibly accrue from santonin if it is combined with calomel, for by so doing we do not allow sufficient time to elapse for the xanthopsin to act on the system, for when the santonin has done its work the calomel removes it. The latter drug is a more searching purgative than castor oil; being likewise a cholagogue, it causes a greater secretion of bile, which, as my readers know, is the natural purgative. Giving the santonin in one of these two methods aforementioned will entirely prevent all dangerous symptoms arising; there will be no convulsions, and no retention of urine, nor will that secretion appear like that found in jaundice, for this one simple reason: the santonin, when it has done its work, is eliminated from the system by the calomel.

The Relation of Certain Skin Diseases to Rheumatism.

In the *Lancet*, July 7th, Dr. Reginald Southey makes the following comments on this subject:—

When the blood is imperfectly depurated by chronic renal disease, when the coats of the blood vessels are degenerated, and the arterial system is generally dilated, as in aortic regurgitation, the proclivity to localized disorders of the circulatory channels, blood stasis, capillary burstings, extravasations, and purpuric rashes, is very great. Erythema nodosum, from the pain and tenderness of the local periostitis, from the aching in the limbs that both precedes and succeeds the rash, is again often mistaken for rheumatism.

M. Couland points out, in the *Archiv. Gén. de Médecine*, January, 1874, the relations which occasionally obtain between erythema papulatum and rheumatism. Devrécagaix describes a mild form of articular rheumatism, attended by a scarlatina-like general exanthema. But the case which I have recorded above agrees too closely with some others which have been described to make me doubt the existence of a purpuric or hemorrhagic form of rheumatism quite apart from erythema with aches. M. Borins, in the *Gaz. des Hôpitaux*, 1874, Nos. 76 and 82, describes the case of a sailor, aged seventeen, who had acute rheumatic pains and articular swelling, and at the same time developed an abundant purpuric rash, which came out first of all upon the extremities, and subsequently, in two successive crops, invaded the trunk and face. M. Féréol (*Gaz. des Hôpitaux*, 1869, or '70, No. 61) relates a case of acute rheumatism—fourth attack—complicated by double pleurisy, purpura hemorrhagica, miliaria, and hydroa pimphegoide. The rash here was general, and came out in crops of deep violet-red spots varying in size from flea-bites to a centimetre in diameter; the spots were a little raised in their centres, gradually fading off at their edges, becoming paler upon pressure with the finger, but never disappearing altogether. There was no scorbutus, and the gums were neither swollen nor affected. The rash was general, but occurred chiefly about the alæ nasi, upon the face, shoulders, legs, and ankles. Complete recovery followed at the end of six weeks, under strengthening and stimulant treatment.

Extensive Tuberculous Ulceration of Intestine.

The following case is reported by Dr. A. Harbison, in the *British Medical Journal*:—

A. S. S., aged twenty-seven, was admitted in May, 1868, for secondary dementia, with maniacal outbursts and a tendency to violence. She became phthisical early in 1876, and had much subsequent excavation of the lungs. In August last she had a slight attack of diarrhœa, which continued for a week; but beyond this there was no apparent disorder of the bowels, which were moved daily, or every other day, until the day before her death, when she was purged five times. She died on January 31st, 1877.

Necropsy.—The head was normal. The lungs were much indurated, and riddled throughout with various-sized cavities, most of which contained thick yellow pus. On opening the bowel it was found very extensively diseased. Scattered over the whole of the large intestine, from a point a little above the rectum, were found sixty-seven ulcers, exclusive of a mass extending continuously over the caput cæcum coli. In the small intestine it was impossible to reckon the number of ulcers; for, besides Peyer's patches generally being affected in this way, a great many ulcers, from the size of a pin's head to that of a halfpenny, were scattered about irregularly, and fifteen bands of ulceration, three-eighths of an inch broad, extended circularly around the intestine, while a sixteenth band passed half round the calibre of the gut, from the mesenteric attachment to the free border. The ileum was affected in its entirety, and the jejunum to within four feet and a half of the pylorus. The mesenteric glands were infiltrated with yellow tubercle, and lines of the same, probably in connection with the lymphatic vessels, were seen on the inner surface of the intestine—in one instance forming a circle one-third of an inch in diameter—inside which the intestine appeared healthy. There were no granulations on, or inflammation of, the peritoneum, although many of the ulcers encroached on that membrane. The transverse and descending colon (as often occurs in the insane) was uniformly contracted to half an inch in diameter.

The points of interest in the case are:

a. The large amount of ulceration present.

b. Its occurrence in the jejunum, where, according to Niemeyer, it is rarely found.

c. The absence of any marked diarrhœa during the progress of the disease, and in spite of the ulcerated condition of the large intestine. "When the large intestine is free from ulcers, and consequently from catarrh, the fluid contents of the intestine entering them become of normal consistence, so that consistent stools are passed during life" (Niemeyer). In connection with this, the occurrence of the contracted colon is worth noting, as giving a possible clue to the explanation of the phenomena, on the ground of the diminution in calibre causing retardation in the passage of the contents, and thus affording greater facilities for their absorption.

Practical Application of Cerebral Localization.

The *Lancet* states that M. Lucas Championnière, in a communication to the Academy, entitled "Des Indications tirées des Localizations Cérébrales pour la Trépanation," called attention to a reliable surgical method for the purpose of detecting cortical lesions. He stated, in the first instance, how he had solved the problem of employing cerebral localizations for using the trephine; the commencement of his studies on this point being the success he had in a case where there was paralysis of some of the muscles of the right upper extremity, with aphasia. The patient, who had no external signs of fracture, and was trephined, almost at a venture, with the idea of lesion of the left hemisphere, recovered completely. A fragment of the inner table was extracted with difficulty from the dura mater, and his symptoms gradually decreased. M. Lucas-Championnière considered, as a patient recovered after an operation performed rather by guess, that trephining could be rendered very useful if advantage be taken of the new doctrines of localization.

When Scarlet Fever is Infectious.

Dr. A. E. T. Longhurst writes to the *Medical Times and Gazette*, July 14, on scarlet fever:—

As regards the exact stage in which infection is most active, uniformity of professional opinion is very necessary; but without occupying space by reference to the many views on this particular point, and to which I am anxious that the observation of the profession should be directed, I will merely say that my own observation forces me to the conviction that the early period of the disease is that in which infection is most active, and in support thereof I will enumerate the following reasons:—

1. That the early intensity of the symptoms on all parts and tissues favors belief of the special communicability of the early stage of the disease, and also that though the first case may prove fatal in a few days, or even hours, before desquamation has been reached, it is often followed by others.

2. That in instances of extension of the disease I have observed more fresh cases prior to desquamation on the first than after it.

3. That, as instanced in my own person during an epidemic a few years ago, the infection is frequently conveyed from cases not having a rash or desquamation at all.

4. That attempts at inoculation of the disease, by introducing scales of the epidermis under the skin of healthy persons, have failed.

5. There is no evidence to prove that the infection is contained in the scales of the epidermis separated during desquamation; nor do I believe, viewing them as effete dead particles of the skin, that they can be infection-carriers.

Other reasons might be adduced, but they are unnecessary. And without confining myself to the limit of this or that so-called stage of the disease, careful observation forces me to the conclusion, that within an hour, possibly even less, of having imbibed the poison, a person may communicate it; and that the period in which the infection is most active is the stage of inflammatory fever, after which it gradually subsides.

Reviews and Book Notices.

NOTES ON CURRENT MEDICAL LITERATURE.

——Alimentation, and the Gastro-Intestinal Disorders of Infants and Young Children. By B. F. Danson, M. D A reprint from the *American Journal of Obstetrics and Diseases of Women and Children*, August, 1875. The doctor does not deny the possibility of unavoidable gastro-intestinal disorders, yet he does believe that the majority of infants and young children suffer and die from these troubles because of the prevailing ignorance as to the requirements of the infant, or to the quantity and quality of the nourishment requisite to maintain perfect health. When such diseases do occur, he believes many an infant would be saved from suffering and death if the stomach and bowels were given that rest for which they so vainly appeal, in a language too often unheeded—vomiting and diarrhœa.

——Contributions to the Treatment of Pulmonary Phthisis. Read before the New Orleans Medical and Surgical Association, May 5th, 1877. By Dr. W. Gleitsmann, Physician in Charge of the Mountain Sanitarium for Pulmonary Diseases, Asheville, N. C. A reprint from the New Orleans *Medical and Surgical Journal*, July, 1877.

——A Case of Tubercular Dropsy of the Abdomen Simulating Ovarian Tumor. By

Theodore A. McGrau, M. D., Professor of Surgery in Detroit Medical College. A reprint from the *Archives of Clinical Surgery*, July, 1877.

——A Simple Mode of Cleansing the Nasal and Pharyngo-Nasal Passages. By Thomas F. Rumbold, M. D., St. Louis, Mo. Reprinted from the Chicago *Medical Journal and Examiner*, May, 1877.

——Early Syphilis in the Negro. By I. Edmondson Atkinson, M. D., Physician to the Baltimore Special Dispensary.

——Thirty-Seventh Annual Announcement of the Missouri Medical College and Hospital, St. Louis, Mo.

——Nineteenth Annual Announcement of the Chicago Medical College. Medical Department of the Northwestern University.

BOOK NOTICES.

Personal Appearance and the Culture of Beauty, with Hints as to Character. By T. S. Sozinskey, M.D., PH.D. Philadelphia, Allen, Lane & Scott, 1877. Cloth, 8vo., pp. 196.

Cosmetic medicine and surgery is a branch of our profession which has been unduly neglected by regular writers, but upon which vendors of quack nostrums and advertising charlatans have built large fortunes. In its sanitary aspect, it is an important branch of state medicine, for the amount of harm which has been done by poisonous cosmetic preparations, and still more by injurious efforts to develop what is called beauty, at the expense of health, has been astounding.

The public need to have their æsthetic notions as to what physical beauty is materially modified; they need to be placed on their guard against dangerous means of obtaining or imitating it; and they demand to be supplied with a variety of preparations, efficient and innocuous, which they can use to improve the looks which nature gave them.

The present book is written in the proper spirit, and with an evident intention to supply these just requirements. While it falls short in much that the physician would look for (as it is addressed exclusively to the general public), it contains a great deal which the ordinary reader would do well to learn. The earlier chapters, on the types of beauty, the basis of beauty, and beauty as an improvable heritage, contain a great deal of sound instruction. On the whole, we name it as a creditable composition, and one which we trust will meet with public favor.

Fat and Blood, and How to Make Them. By S. Weir Mitchell, M.D. Cloth, 8vo, pp. 101.

Nurse and Patient, and Camp Cure. By S. Weir Mitchell, M.D. 32mo, pp. 74. J. B. Lippincott & Co.

In the first of these little books the author describes certain methods of renewing the vitality of feeble people, especially thin, nervous women, by a combination of entire rest and of excessive feeding, made possible by passive exercise obtained through the steady use of massage and electricity. It is an enlargement of a lecture first published in the series of "American Clinical Lectures," edited by Dr. Seguin.

The plan he proposes, though not a new one in its principle, as systematic feeding and passive exercise have frequently been recommended for the purpose, has many novelties in detail, upon the faithful observance of which the success of the treatment, he considers, may depend. The auxiliaries required are seclusion, rest, massage and electricity, to each of which the author devotes a chapter, explaining the peculiarities of his plan in making use of them. The chapter on dietetics gives minute directions as to the plan he prefers, of feeding the patients.

It is sufficient to say that the results reported are such that the author himself says he cannot blame readers if his statements excite in some of them the distrust which the relation of "remarkable cures" so naturally inspires. We all know how very easy it is for the enthusiasm for a particular—especially a highly complicated—method of treatment to obscure the most honest attempt to estimate its value.

This being the case, we cannot but feel some surprise that so scientific a writer as Dr. Mitchell has omitted to state the whole number of cases so treated, with the number of failures; and still more, that he has not eliminated one after another of the various accessories he recommends, in order to ascertain whether they are all indispensable, of which the reader must entertain some doubt. Such an application of the logical procedures of average and exclusion would not have been thrown away.

The second work mentioned contains reprints of two pleasant and instructive articles contributed to *Lippincott's Magazine*.

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D. G. BRINTON, M. D., EDITOR.

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D. G. Brinton, M. D.,
115 South Seventh Street,
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DEATH BED STUDIES.

In a recent number of the *New Quarterly Review* is an article on "The Riddle of Death," by Francis Power Cobbe. The author, confining the inquiry to those cases where the bodily conditions do not apparently interfere with the perfect sanity of the patient up to the moment of dissolution, asks, whether in such cases instances have ever been known of occurrences having any significance, taken in connection with the solemn event wherewith they are associated? In answer to this a number of examples are cited, in which persons dying in all apparent sanity have shown unmistakably, by their gestures, and sometimes by their words, that they saw in the moment of dissolution what could not be seen by those around them.

This observation we believe to be well founded. The instances cited, though not reported with much precision, are, no doubt, in the main, true. Moreover, we can recall in our own experience, to have personally known instances where the words, the gestures, and still more, a very marked and remarkable change of expression in the features of the dying, proved beyond doubt that they experienced within the last few minutes or seconds of life a train of emotions wholly different from what they had recently been manifesting. We lay particular stress upon the alteration in the expression; for when the individual is too far gone to speak, let alone to make a gesture, the involuntary reflex nervous action continues to indicate, in a manner that admits of no doubt, the mental action still going on.

But the interpretation of these acts may not be that suggested by the writer above quoted—to wit, that it is a glimpse of the world beyond, the immaterial form of existence, which meets the dying eye and lights it momentarily with ineffable joy, or appalls it with a nameless terror.

The inexorable principle of science, the first law of reasoning on facts, bids us, in all cases, assume the *simplest* explanation of a physical phenomena to be the true one. And these purely physical facts we have been speaking of may readily enough be explained as the manifestation of a momentary delirium which precedes dissolution, finding its proximate cause in the cessation of cerebral nutrition, its complexion partly in the nature of the disease or injury which brings about death, partly in the general previous thoughts and habits of the individual.

Physicians are well aware that the behavior of men when death is imminent, though partly governed by what we call courage, or fortitude, is also largely affected by other causes—as by their convictions regarding a future state, by their existing social relations, and by the character of disease or injury with which they are suffering. Persons who enjoy happy surroundings and pleasant domestic and social relations are influenced—by a strong love of life, rather than a fear of death—to wish to stay.

Where the reverse is the case, death has not only no terrors, but is often sought as a relief. The religious views which persons entertain have also considerable influence, though it is constantly witnessed that some devout religionists betray excessive trepidation at the approach of death, and others extreme exaltation; while as many professed anti-religionists pass through their last hour with calm serenity, as with remorse. That the conduct of eminent teachers and philosophers on their death-beds should ever have been adduced, *pro* or *con*, as testimony in regard to their doctrines, is a singular absurdity. It makes no difference what a man believes, so that he believes it firmly, so far as its effect at such a time is concerned.

The immediate cause of the death has much to do with its character. In some diseases, as in cholera, patients commonly manifest but little concern as to their fate. In the Surgical History of our late war it is observed that wounds of the chest and abdomen are usually accompanied by great agitation, alarm and anxiety, overcoming the valor of the bravest soldier. In other terrible wounds, as when the limbs are torn off, or when the sympathetic system is overwhelmed, a perfect calmness and serene consciousness are present—a symptom far more ominous to the experienced surgeon than the trepidation just mentioned. It has been remarked that those dying from sword wounds have a languid, resigned aspect, while those killed by shot present a firm, defiant expression. It is probable that these differences, though, no doubt, indicative of the emotions of the last moment of life, yet depend a good deal on the structure implicated, and are modified, as the mortal wound affects the nervous, circulatory or respiratory system. In the same manner, as death from disease begins at the head, the heart or the lungs, we may suppose a corresponding difference in sensation takes place, which will be manifested on the facial muscles.

More extraordinary than this, to our mind, is the occasional sudden return to sanity, for a few hours before death, of the chronic insane, even of those who for many years have been considered hopelessly impaired in cerebral structure. And most remarkable of all are those instances—few in number, it is true, but one of which we were personally cognizant of,—where very aged people, after years of utter senility, for a few minutes, or for an hour or two before death, regain their mental power, their memory of events, and the acuteness of their senses.

As to the inquiry which we started by quoting, the medical man is obliged to encourage strong doubts whether the death change referred to can be attributed to any causes dissimilar from those above mentioned; however glad he would be to be able to contribute, from his necessarily extensive observation of the close of mortal life, some facts which would throw light on what comes thereafter, it is noticeable that in no physiologies or monographs, such as the classical one of Bichat, is there any hint or suggestion that the study of the phenomena of Life teaches us what, if anything, is written on the blank page of Death.

Notes and Comments.

Dangerous Vinegar.

The Board of Health of the District of Columbia has condemned five car-loads of vinegar sent there from Chicago, on the ground that it is not a genuine article, and is injurious to health. An analysis of the so-called vinegar has been made. It appears, according to the report of the Board of Health, that the vinegar contains $54\frac{54}{100}$ grains per gallon of anhydrous sulphuric acid, combined with lime, to form a sulphate of lime equivalent to $117\frac{36}{100}$ grains of gypsum per gallon, and besides that, five grains of free sulphuric acid per gallon. The Board also reports that this sample was taken from an invoice of more than 1000 barrels brought there to be sold as vinegar, and that it is likely to find a ready

sale on account of its low price. The report concludes as follows:—"When we think that oil of vitriol (sulphuric acid) can be bought at five cents per pound, and that a pound of said acid would render a barrel of fluid as acid as the strongest vinegar, the wonder will cease that it is sold cheap. This, therefore, is a fraud upon commerce, and a dangerous substitute for vinegar." The fraud and danger are more general than the great mass of people will readily believe. It is asserted that probably one-half the vinegar sold at city groceries is a rank poison, with either sulphuric or other objectionable acids for its base.

Professor Huxley on the Anti-Vivisectionists.

In a recent address relating to the law prohibiting vivisection for scientific purposes, lately passed in England, Professor Huxley summed up the whole contradictoriness of the situation as it had all along been seen by liberal and sensible men. "I think it my duty," says the Professor, "to express my regret at a condition of the law which permits a boy to troll for pike, or set lines with live frog bait for amusement; and, at the same time, lays the teacher of that boy open to the penalty of fine and imprisonment if he uses the same animal for the purpose of exhibiting one of the most beautiful and instructive of physiological spectacles, the circulation in the web of the foot. The first offender says, 'I did it because I find fishing very amusing,' and the magistrate bids him depart in peace. The second pleads, 'I want to impress a scientific truth, with a distinctness attainable in no other way, on the minds of my scholars,' and the magistrate fines him £5." The illustration is a homely one, but it exactly expresses the facts in the case, and it seems hardly possible that the anomaly will be permitted to much longer stand in British law. If it should so remain, our English cousins must be content to be open to the charge of neglecting important means of education on a very insufficient plea.

Some Expedients of Malingerers.

A white tongue is made with the white of the wall; a brown one with soap and tobacco. Feebleness of the heart can be produced by a cord around the waist, and a reduced pulse by a ligature around the arm. Palpitation may be produced by a ligature around the waist; by the use of tobacco, much coffee, or white hellebore; garlic and tobacco have been introduced into the rectum for the same purpose. Some persons can increase the force of the pulse at will. Consumption has been simulated by producing emaciation by abstaining from food, and the use of vinegar, sucking a copper coin, swallowing the sputa of consumptive patients, etc. Jaundice, by painting with an infusion of rhubarb or turmeric, or the internal use of the same. Indian fig will color urine blood color. Black urine was produced in one case by a boy putting cotton soaked in ink around the glans penis.

Sexual Hygiene.

Professor Hartshorn, formerly Professor of Hygiene in the University of Pennsylvania, gives the following condensation of his views of sexual hygiene:—

1. The action of the reproductive organs is not necessary to the individual; its purpose being the continuation of the species.

2. No harm results from inaction of the generative organs.

3. Sexuality is healthy and safe only in marriage.

4. The married state is, as as a rule, rather more favorable to health than celibacy.

5. Abnormal sensuality is injurious in proportion to prematurity, deviation from nature, and frequency of indulgence.

6. Hygiene furnishes no justification for prostitution.

The Variation in Quality of Woman's Milk at Different Stages of Nursing.

During the first month the mother's milk lacks in sugar, while there is an excess of it during the eighth and ninth months. Caseine is in excess during the early months, and deficient in the later. Butter as well as salts are most abundant during the first month. This leads to a practical deduction. Wet nurses should have milk of the same age as that of the mother's.

Ovariotomy During Pregnancy.

At a meeting of the London Obstetrical Society, a paper on the above subject, by Mr. Spencer Wells, was read. Mr. Wells has performed the operation in nine cases during pregnancy. One of the patients died, and the other eight recovered. In the majority of the cases the operation was undertaken at an early

period of gestation, but in two it was performed about the seventh month. The favorable results obtained tend to show that operations performed during pregnancy are not so dangerous as is usually believed, and in cases where tapping would be inadmissible or futile on account of the character of the tumor, ovariotomy may be produced.

Can a Stroke on the Face Rupture the Membrana Tympani?

Dr. Fritsch replies in the affirmative, citing several cases, and claims that, on testing by Valsalva's method, a loud whizzing can be heard in the external auditory passage. If the opening in the membrane be the result of disease, the sound is of a hissing character, which can be readily explained by the partial stoppage of the Eustachian tube by inflammatory secretions. The opening in the membrane produced by a blow is a fissure, whilst that caused by disease is round or oval.

Some Experience Concerning Hay Fever.

From a pamphlet recently sent us, we quote some remarks on Hay Fever, by Dr. G. F. Patton. Dr. Patton, in order to test the opinion that hay fever is caused by the pollen which is produced by the blooming plants of early summer, gave himself an opportunity to apply the pollen of testuca prætensis, dachylis glomerosa, secale cercale to the nostrils, upon the conjunctiva and in scarified spots in the skin, without causing anything more than a passing irritation. For the treatment of the disease he advises, in the place of the very irritating quinine, salicylic acid, 1–500, with the addition of three parts of common salt.

Physiological Education.

This subject has lately received additional interest from a paper entitled the "Intervention of Physicians in Education;" also a set of resolutions of the New York Academy of Sciences on the subject of "Physiological Education." The author of the essay, and likewise the member of the Academy at whose instance the committee which brought in the resolutions referred to was appointed, is Dr. Edward Seguin, of New York.

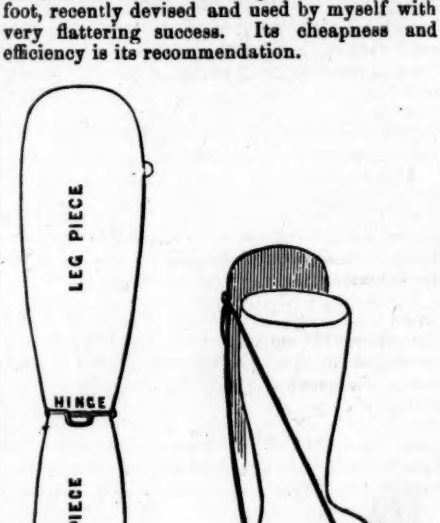
In his paper, Dr. Seguin advocates the active intervention of the physician in the training of children, and he thinks that such intervention should result in the establishment of open air garden schools, and also in the physician becoming the "keeper of the balance of the vital forces of the children."

Correspondence.

Treatment of Club Foot.

Ed. Med. and Surg. Reporter:—

I herewith send a sketch of a simple and very efficient device for the early treatment of club foot, recently devised and used by myself with very flattering success. Its cheapness and efficiency is its recommendation.



The apparatus is in two pieces, joined by a hinge; material, tin or galvanized iron, bent or moulded to fit the leg and a normal foot; a piece of felt is glued to the inside, to serve as a padding, to prevent chafing; a piece of common emplas. adhesivum is gummed on the reverse side and attached to the splint. The sole of the foot is accurately placed on the foot piece, having warmed the attached plaster and secured by adhesive straps over the dorsum and passing around the splint. The foot is now brought into a proper position by bringing around the leg piece in the proper line, and the leg piece made secure by strapping. A few turns of roller bandage carried from the toes upward, to equalize the pressure, completes this part of the operation. A cord carried from the rings on the outer aspect of the splint brings down the heel. You will observe that any desirable amount of eversion can be secured by altering the line of the hinge. Believing this to be new, I submit it, for the benefit of the profession.

Very truly yours, G. Law, M. D.,
Greeley, Colorado.

Metal as Superior to Glass Mirrors.

ED. MED. AND SURG. REPORTER:—

Scientific development has placed within the attainment of the medical profession valuable and indispensable auxiliaries to the pursuit of diagnosis. To the special faculties of sense have been contributed various instrumental means that have vastly increased the observer's power of apprehension of deviations from the normal standard. Not least among these means have been long employed speculæ, to illuminate the more remote or obscure regions of the body, so that much definite important knowledge has been secured relative to the exact pathological conditions existing. Among these speculæ there has been, I believe, for the investigation of the eye and throat, only the instrument of common glass amalgam employed, and which has ordinarily fulfilled all the requirements demanded of it.

A few months since my attention was directed to these speculæ, with the impression that if an instrument could be gotten up conjoining equal efficiency with absolute durability, a desideratum would be obtained for the demands of the profession at large.

I instructed the instrument maker to construct such a one as I had devised, and as I thought would embody the essential optical principles involved, and after a series of experiments was presented with an instrument that seemed to demonstrate the idea perfectly, and one in almost everything preferable to the glass reflector. The instruments consist of ophthalmoscope, laryngoscope, and throat mirrors, of the usual dimensions. They are constructed entirely of metal, with a very bright reflecting surface. Their power of reflection is very nearly or quite the same as the best glass mirror, illuminating the optic disk or throat at an appropriate focal distance. The throat mirrors possess the property of retaining the heat a greater length of time, and thus can be retained in place without their surface becoming indistinct so soon as the glass ones, so that oftentimes a much more satisfactory view can be obtained of the tissues exposed. It is well known that, through the effects of heat, or other influence, sooner or later, the amalgam becomes detached from the glass, leaving the instrument worthless, and, also, they are very liable to become broken by accident. This undesirable quality is obviated in this instrument, only requiring ordinary care, by envelopment in chamois, to protect them from dust, and possess an absolutely perfect and permanent lustrement. Their expense should be no more than those of glass, and with the certainity of obtaining a satisfactory and durable instrument.

The above, I believe, is a fair description of their claims to the notice of the profession. I should be pleased to respond, at any time, to inquiries relating to them. Very truly yours.

T. G. COGSWELL, M.D.

51 *Monroe avenue, Rochester, New York.*

Case of Atropia Poisoning.

ED. MED. AND SURG. REPORTER:—

I would ask to call your attention to the effects and results of an overdose of atropia, as illustrated in the following case:—

Mrs. S., aged thirty-nine; strumous diathesis. Under treatment at Camden Infirmary for kerato iritis of left eye. Her husband being with her, was ordered to give a teaspoonful of chloral mixture, but got hold of a solution of sulphate of atropia, gr. iv to ℥j, and gave her a teaspoonful of it, making one half grain of atropia that she got. I was informed of the fact in about ten minutes. She was given at once cupri sulph., gr.iij, mustard, warm water, etc., until brisk emesis ensued. Afterward, a hypodermic injection of morphia, and at intervals of fifteen or twenty minutes an infusion of cinchonia cort. She had all the symptoms of belladonna poison—acceleration of pulse; diffusion of warmth throughout the cutaneous surface; complete dryness of the mouth, throat, etc. The dose was taken about five o'clock, P.M. She had a very good night's rest. Said her eye was much better next morning, but complained of very severe pains in her limbs; lies with her legs drawn up; the extensors of the forearm flexed, simulating "wrist-drop," with excruciating pains in the biceps and deltoid muscles.

Ten or twelve days have now elapsed, and still she is suffering with pains in the fleshy muscles of her limbs. I attribute them to the overdose of atropia, as she had no such trouble before taking the dose.

I would like to hear from some one, through your columns, who has had more experience with the drug than myself. Respectfully,

GEORGE W. HUDSON, M.D.

Camden, Ark., August 14th, 1877.

NEWS AND MISCELLANY

The Growth of Children.

The growth of children has been made the subject of very ingenious and original researches, through some 25,000 measurements of the children in the public schools of Boston, by Professor Bowditch, of the Harvard Medical School. His own summary of the most important results he has obtained is as follows:—"The growth of children takes place in such a way that until the age of eleven or twelve years boys are both taller and heavier than girls of the same age, but at this period of life girls begin to grow very rapidly, and for the next two or three years surpass boys of the same age, in both height and weight. Boys then acquire and retain a size superior to that of girls, who have now nearly completed their full growth. Children born of American-born parents are, in Massachusetts, taller and heavier than children of foreign-born parents, a superiority which seems to depend partly on the greater average

comfort in which such children live and grow up, and partly upon differences of race or stock. Pupils of American parentage at the public Latin school and other higher schools are (apparently for the same reasons) superior in height and weight to the generality of boys of American parentage in the public schools, and to English boys of the non-laboring class attending public schools and universities, the superiority in weight being, as a rule, more marked than that in height."

Personal.

—The University of Heidelberg commemorated, in July, the twenty-fifth anniversary of Professor Bunsen's election to the Chair of Experimental Chemistry. Students of all faculties joined in a torchlight procession, which was followed by the traditional symposium, while a deputation presented the congratulations of the Academical Council. Professor Bunsen held the Chair of Chemistry in the Universities of Marburg and Breslau before he was called to Heidelberg, and, as is well known, declined a few years ago a call to Berlin, which he received at the same time as Professor Kirchhoff, with whom he is the founder of stellar chemistry. Though at the age of sixty-six, Professor Bunsen completes his fiftieth course of lectures at Heidelberg in the full vigor of both mind and body.

—The *Cologne Gazette* announces that Dr. Erisman, a pupil of Pettenkofer, the well known Professor of Hygiene in Munich, has been applied to by the Russian Government to undertake the direction of disinfecting the battle-fields in Turkey.

—Dr. C. C. Vanderbeck has removed from 1121 to 1011 Walnut street.

—The Jefferson Medical College opened Monday, September 3d, with an unusually large autumn class.

Obituary Notes.

—Dr. George Lewis Collins died August 21st. At the time of his death he ranked among the first physicians of Rhode Island. He was a close clinical observer, and a contributor to medical literature. He died of cerebral hemorrhage, at the age of 57.

—D. N. Stein, a New York physician, committed suicide by jumping from the Niagara Suspension bridge, on Saturday, September 1st. Dr. Stein was a man of intellectual attainments. His son, Dr. Edward N. Stein, who was also a physician, committed suicide in New York city a few weeks ago, and it is believed that the elder man's mind was weakened by the shock. Another son—Dr. Alexander M. Stein—is also a resident of New York.

—The Paris correspondent of the New York *Times* has some interesting notes on the late Dr. Conneau, who died in Corsica last month. He was the physician and friend of Napoleon III. It was Conneau who planned the escape from the Fortress of Ham, and it is touching, even now, to read his deposition when called to account for the act. During the Empire he was almost an inmate of the palace, and not a day passed without an interview with the Emperor, not only as a medical adviser, but as a friend. Conneau watched the Prince carefully, to keep him in health, and called in eminent specialists for each malady divined or discovered by himself. He had no pretensions. He was the private medical adviser of the Emperor, but he never refused to share the honors with his colleagues, and the rewards were always for them, not for him. He had 1,500,000 francs placed in his hands annually, to distribute among the poor as he saw fit, and when the Empire fell Conneau was so poor that Mme. Conneau had to teach music for a living. He loved the Island of Corsica with all his heart, because it was the cradle of the Bonapartes, and often expressed the wish to die there. When his health failed he went there, and it was there that he died, passing away calmly and peacefully, after an eventful and most honorable career.

Items.

—The meeting of the French Association for the Advancement of Science took place this year at Havre. The session extended from the 23d to the 30th of August, and included general and sectional meetings, scientific excursions, and public conferences. The meeting was opened by Professor Broca, as President, the Vice-President being M. Hulkmann, the chemist of Lille, and the Secretary being M. Dehéran.

—The first meeting of the American Dermatological Association was held at the Cataract House, Niagara Falls, New York, September 4th, 5th and 6th, 1877. Officers for 1877—President, James C. White, of Boston. Vice-Presidents, Louis A. Duhring, of Philadelphia; R. W. Taylor, of New York. Secretary, L. Duncan Bulkley, of New York. Treasurer, James Nevins Hyde, of Chicago.

QUERIES AND REPLIES.

Anxious.—The alternative you propose is never justifiable, because it is never necessary to the breaking up of your habit.

Subscriber.—Tetter or scall is applied to a variety of skin diseases. Moist tetter is eczema, for the treatment of which we refer you to Dr. Bulkley's excellent monograph.

Neolos.—Our fall announcements will be made in a week or two. Meanwhile we inform you that all new subscribers for 1878 will commence now, without extra charge for the rest of this year.

DEATHS.

BURDEN.—At Philadelphia, suddenly, of heart disease, on August 31st, 1877, Dr. Jesse R. Burden.